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Evaluating the Feasibility of Monitoring and Operating a Watershed Via the Internet (Virtual Watershed)

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There is excellent evidence that better and more timely information, coupled with manual or automatic remote control, makes for better water management of water projects. While collecting real-time data is occurring with increasing frequency, the distribution of these data to all water users (and others), including river commissioners, canal operators, wildlife managers, irrigators, recreationists, forecasters, meteorologists, etc., is not occurring to the extent it needs to occur for effective water management. There have been many questions about the best way to distribute this information. Of all the methods currently being used, the Internet seems to have the best potential for timely two-way communication. Not only can real-time data be dispensed over the Internet, but so can the output from water rights models, reservoir simulations, water quality models, weather and river forecasts, fishing prognostications and prevarications, irrigation scheduling models, etc. The Internet may also be an excellent venue for placing water orders to river commissioners and canal managers.

This applied research project is working to develop and evaluate the components of a comprehensive water resource Internet web site, one designed to enhance water management over an entire river basin. The project's demonstration web site, <http://www.sevierriver.org> (developed in conjunction with the Sevier River Water Users Association and StoneFly Technology), is an amalgam of information dispensing, information generating, and information collecting activities. Objectives for FY 1999 included: (1) developing software for making water orders over the Internet; (2) developing software for making reservoir release recommendations; (3) developing and testing software for control over the Internet; (4) installing sensors to enhance troubleshooting of automation equipment; and (5) evaluating the usefulness of displaying real-time images on web sites.

The Internet has tremendous potential for enhancing the management of water projects, river basins, etc. We are only now beginning to scratch the surface of what is, or soon will be, possible. The reaction of water users has greatly exceeded expectations.

Sevier River Water Users Association, Emery Water Conservancy District, StoneFly Technology, Utah State University, University of Utah (Mesonet), National Weather Service, National Telecommunications and Information Administration, Utah Division of Water Rights, and Utah Department of Comprehensive Emergency Management.

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Hansen, Roger D., Arlen Hilton, Frank Woodward, Bret Berger, and Russell Anderson. Monitoring and Operating a Watershed Using the Low-Cost Automation and the Internet. Paper presented at U.S. Committee on Irrigation and Drainage (USCID) Workshop on Modernization of Irrigation Water Delivery Systems, Phoenix, Arizona, October 1999. Paper to be published in Proceedings.

Hansen, Roger D., Bret Berger, Russell Anderson, and Ray Owens. Monitoring and Controlling Your Watershed on the Internet. Workshop presentation at the Annual Meeting of the Water Water Users Association, St. George, Utah, March 1999.

The <http://www.sevierriver.org> website was featured on the National Partnership for Reinventing Government website, AccessAmerica (Environmental Information), August 1999.